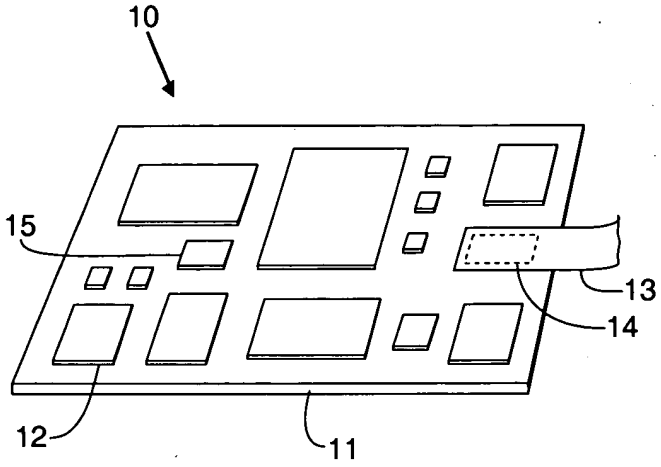

FIG. 1

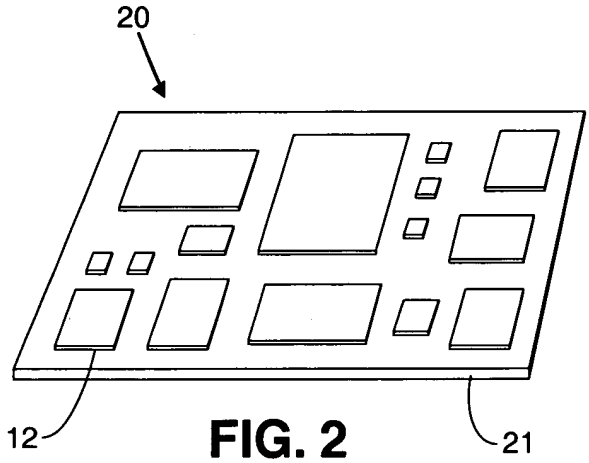

FIG. 2

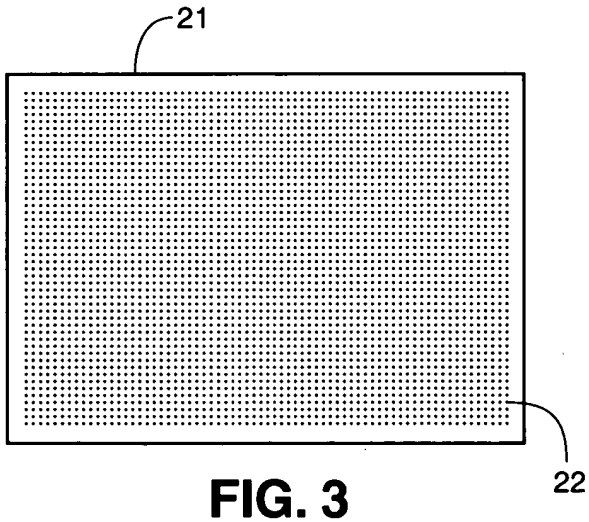

FIG. 3

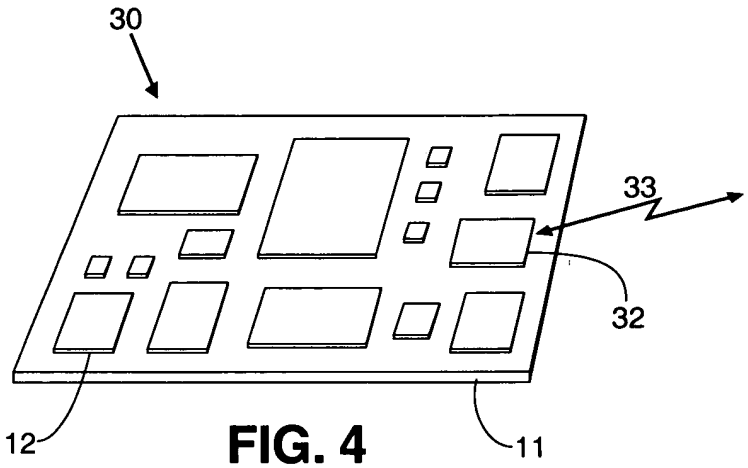

FIG. 4

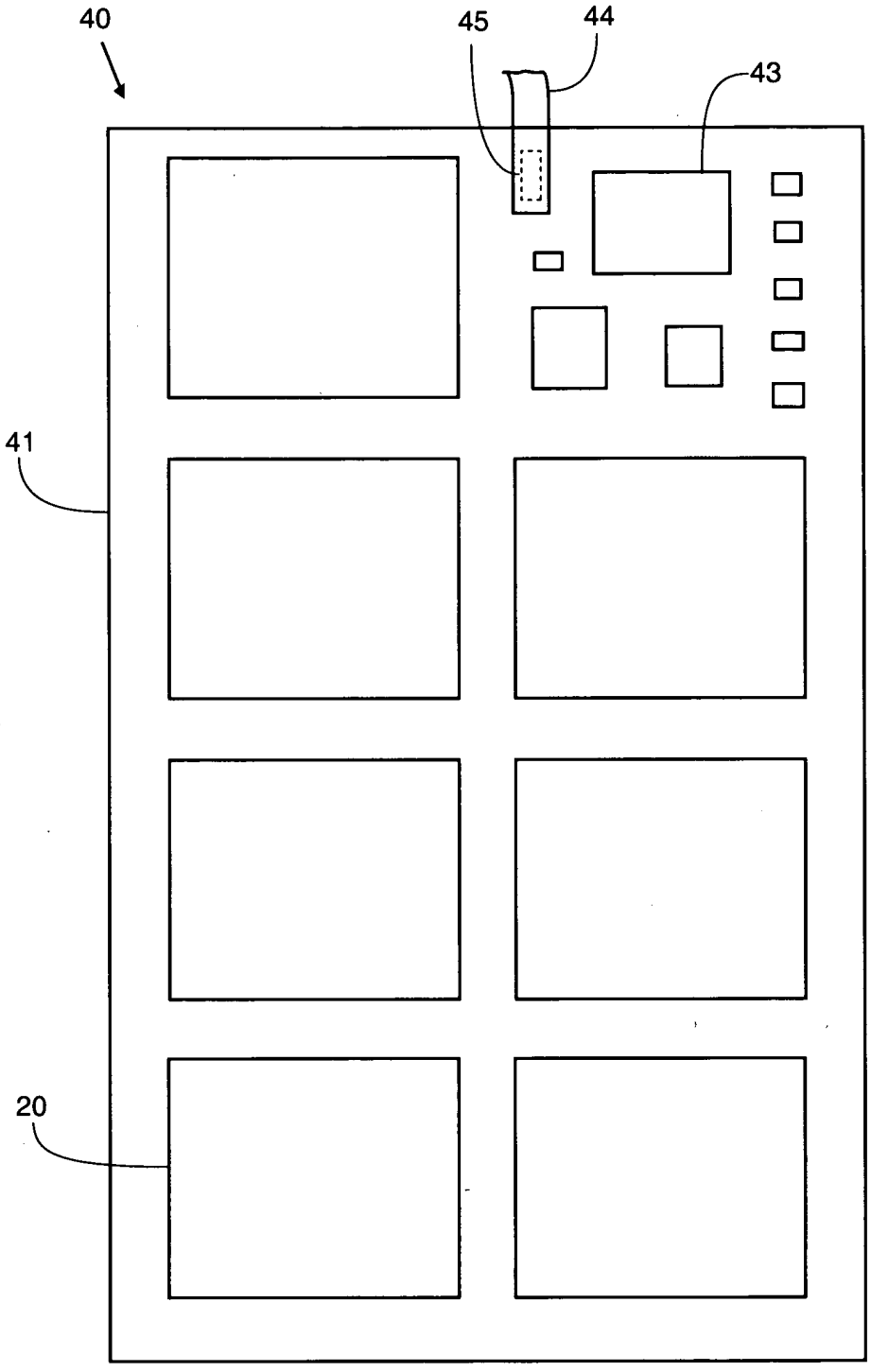

FIG. 5

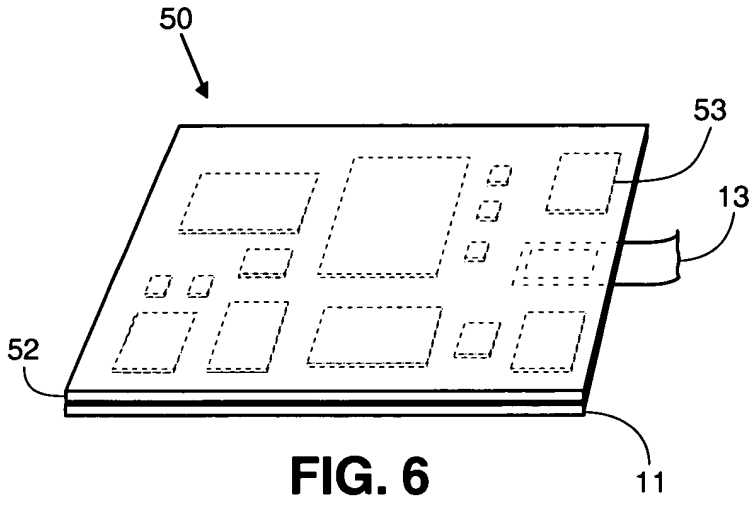

FIG. 6

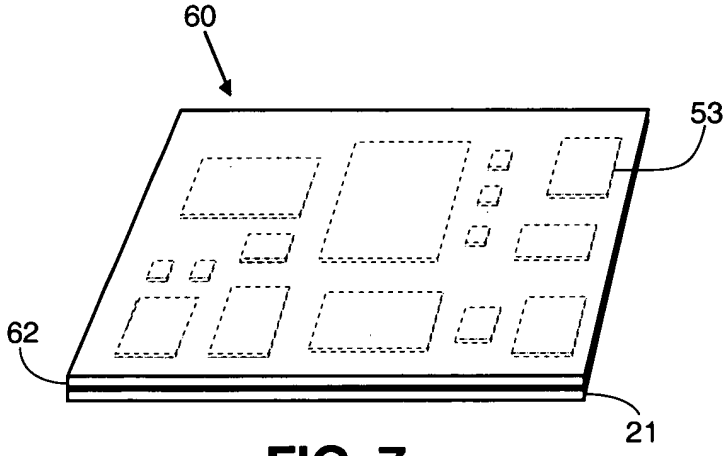

FIG. 7

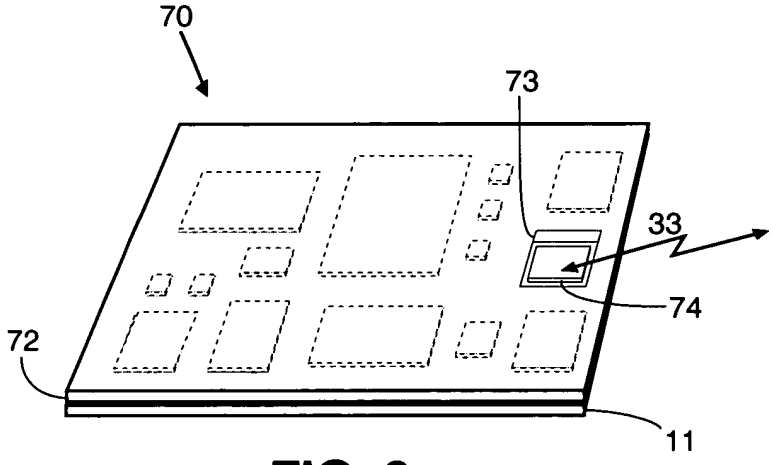

FIG. 8

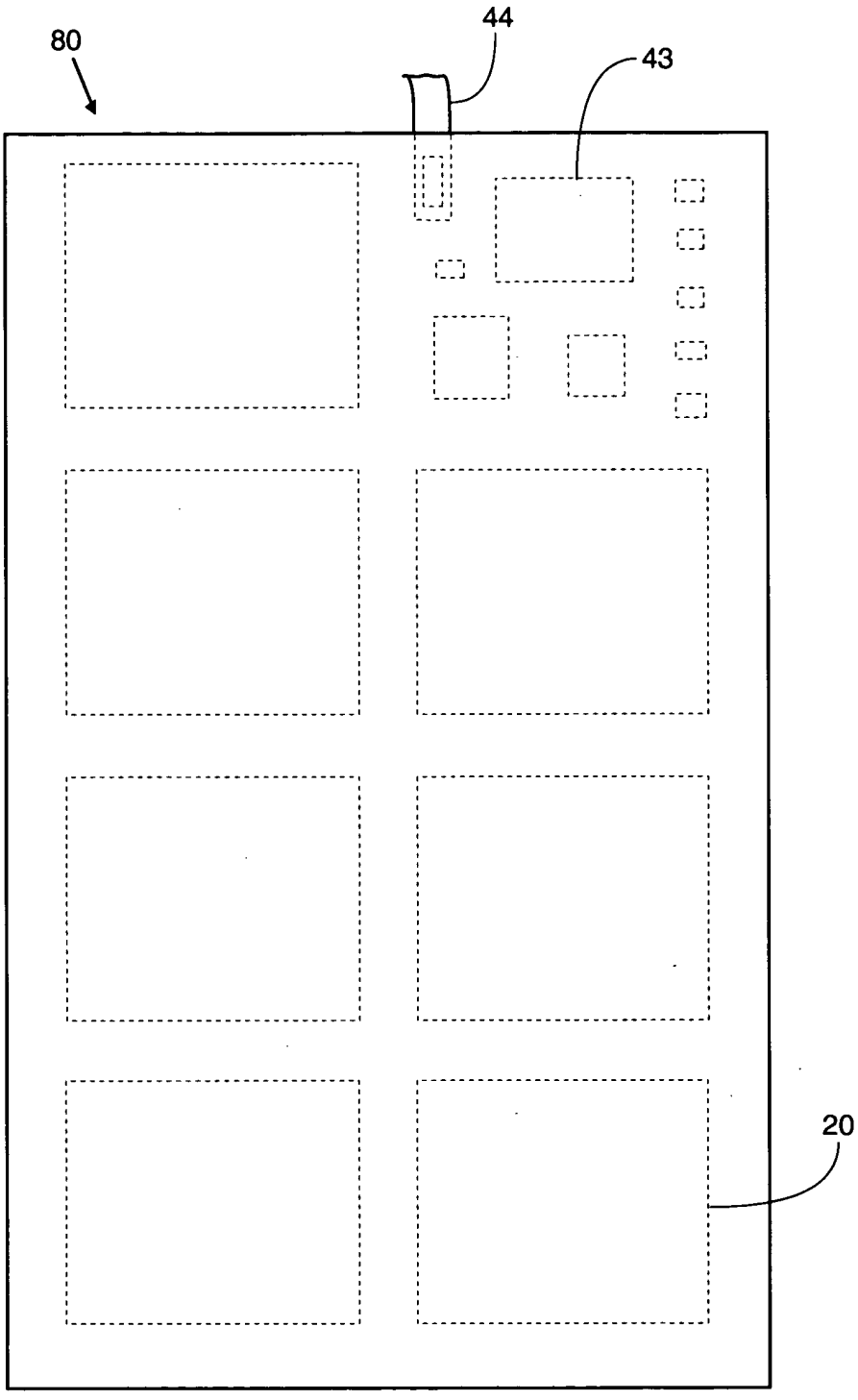

FIG. 9

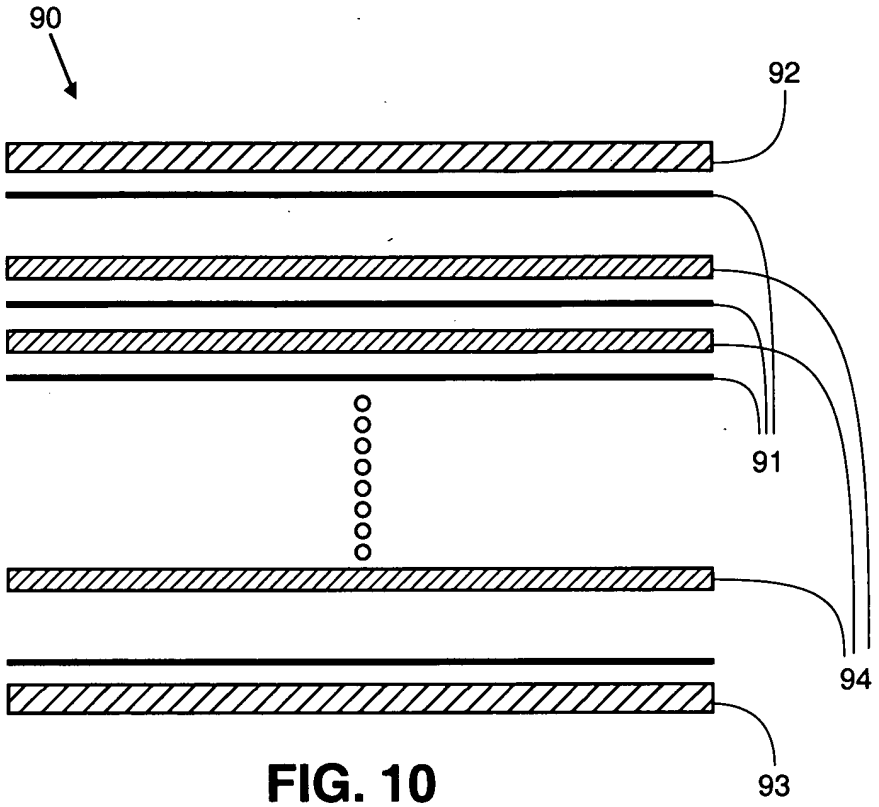

FIG. 10

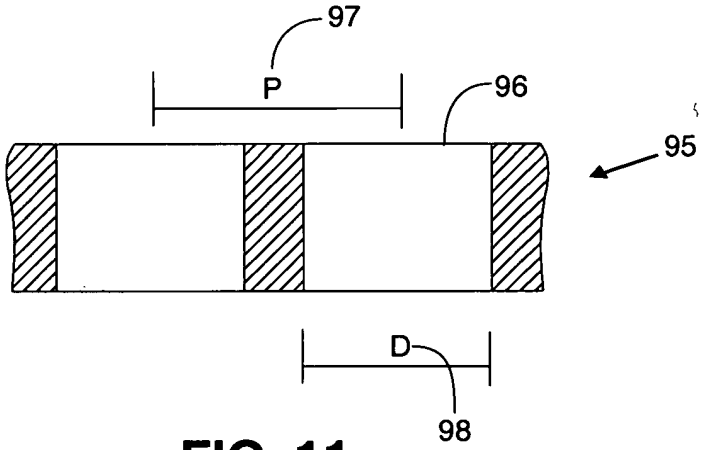

FIG. 11

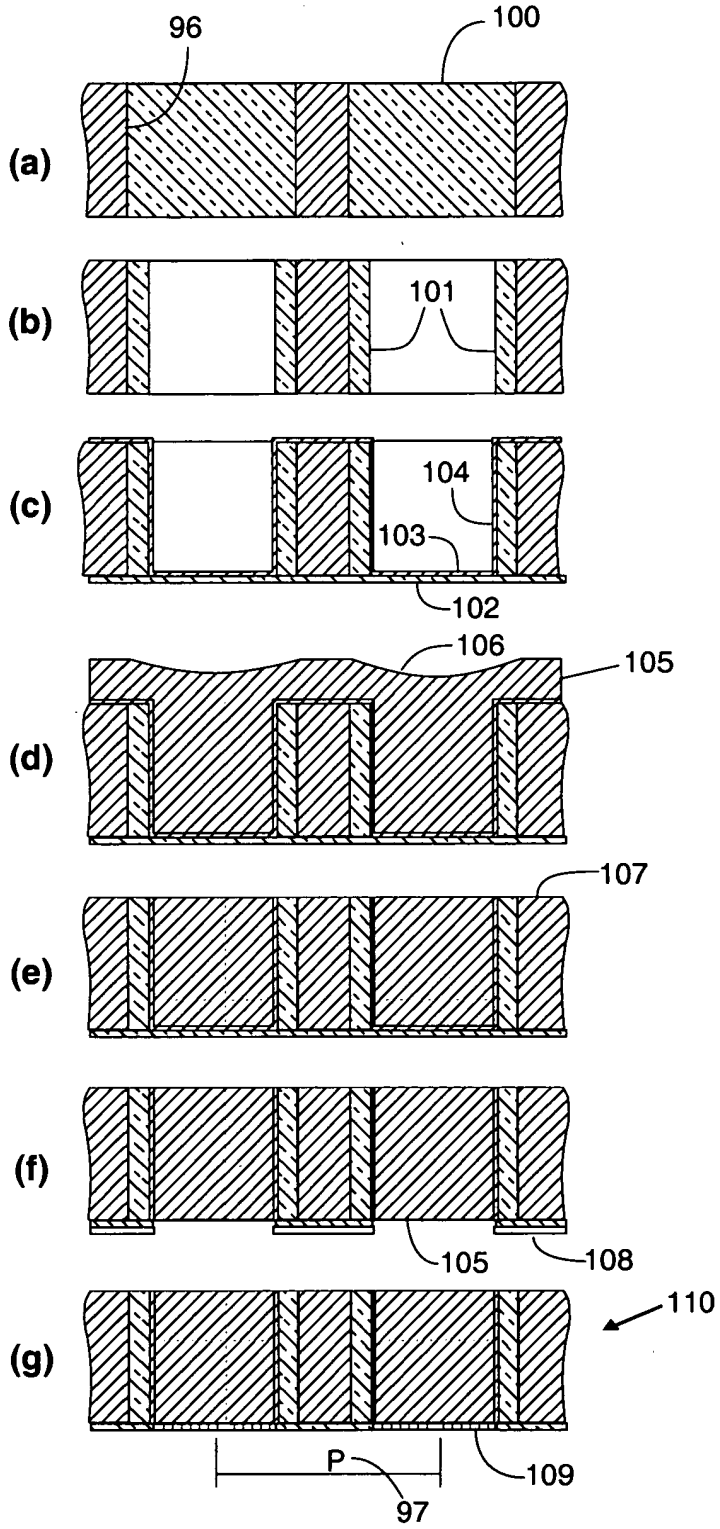

FIG. 12

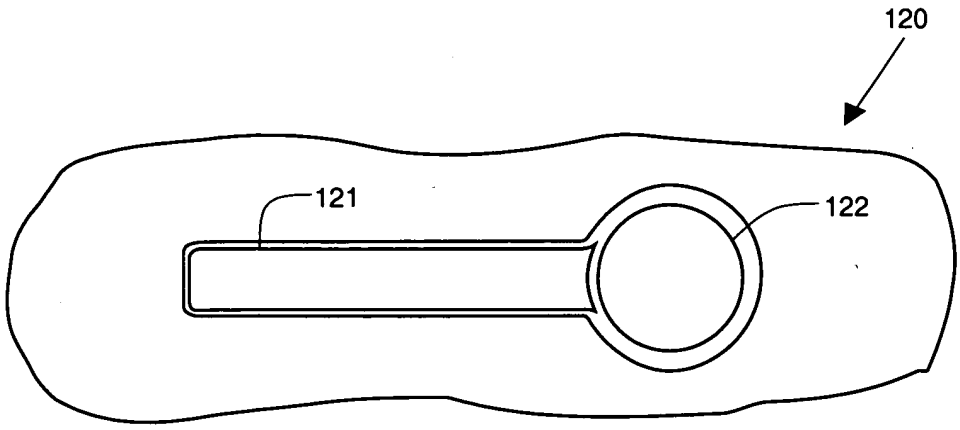

FIG. 13A

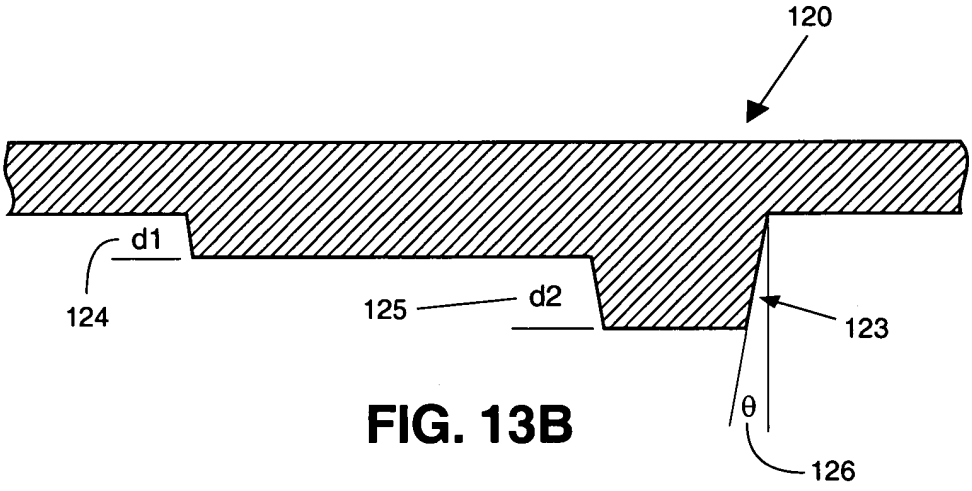

FIG. 13B

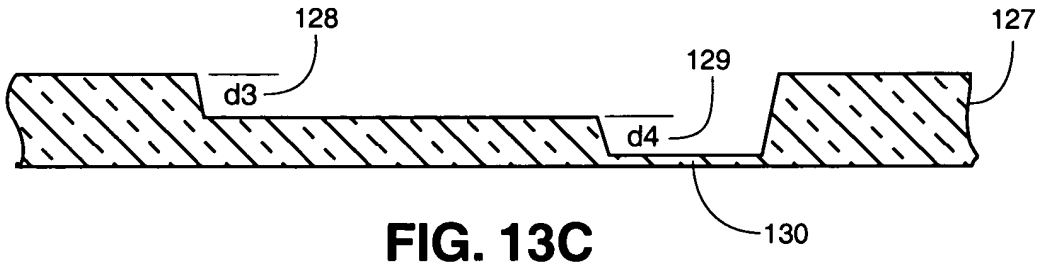

FIG. 13C

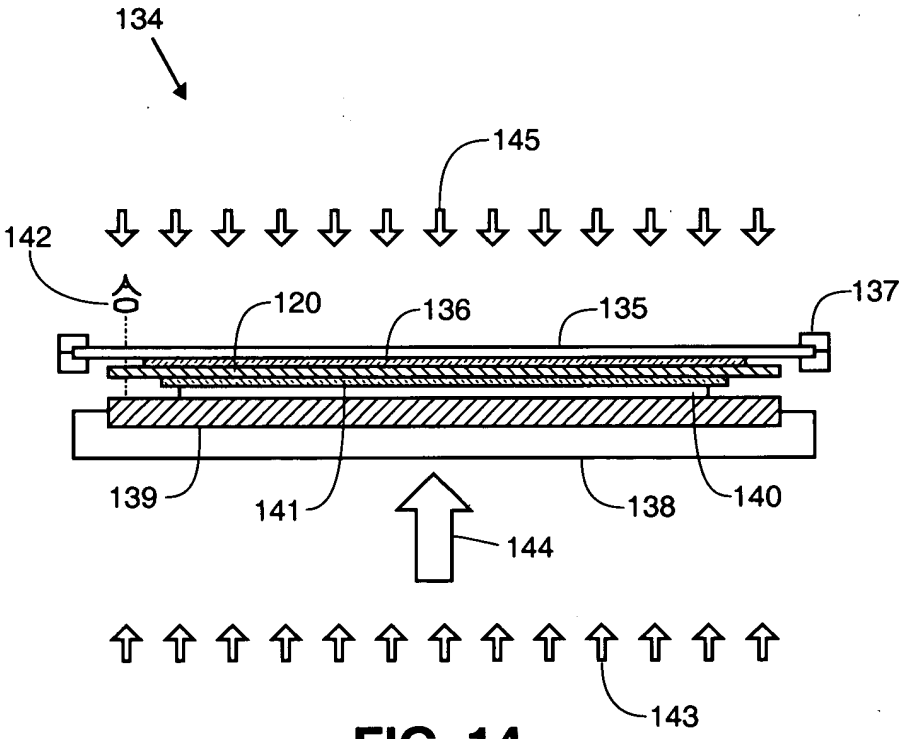

FIG. 14

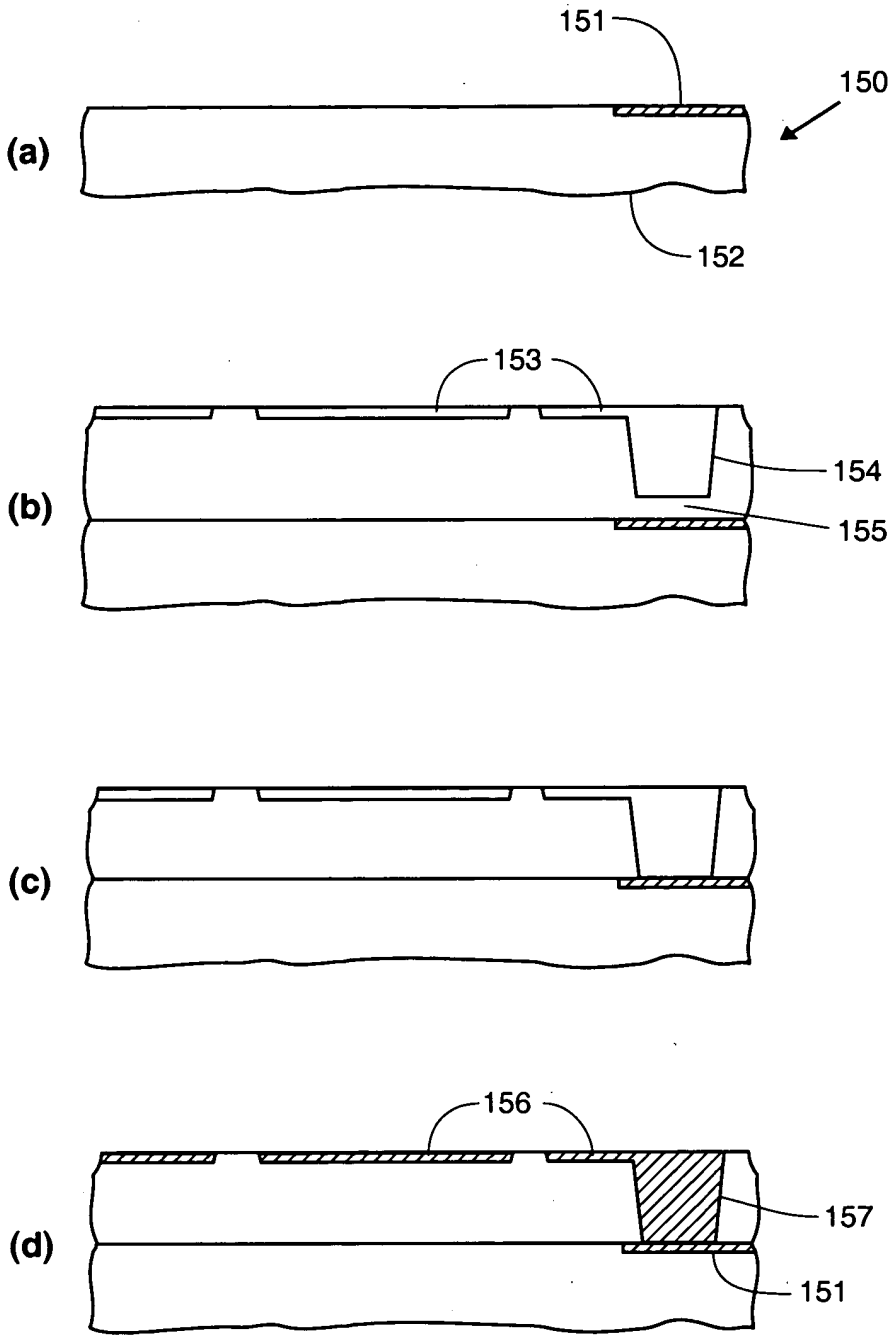

FIG. 15

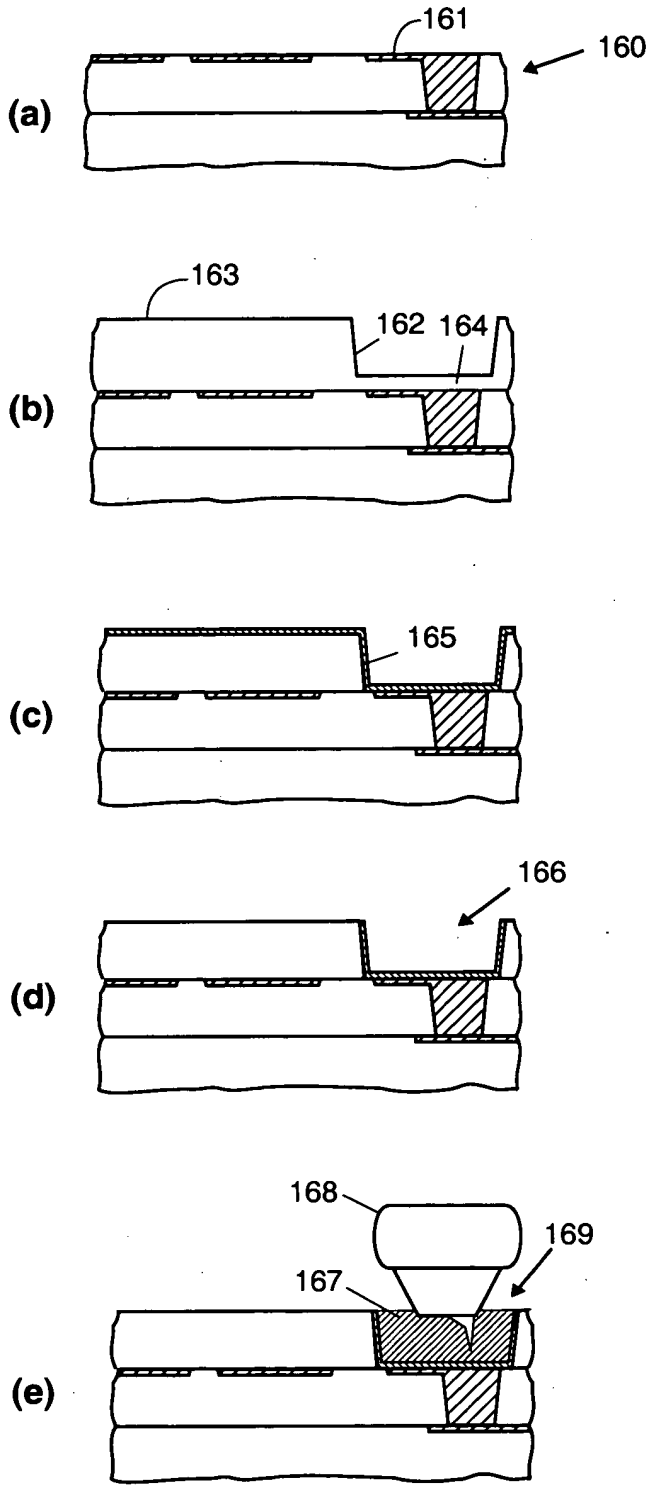

FIG. 16

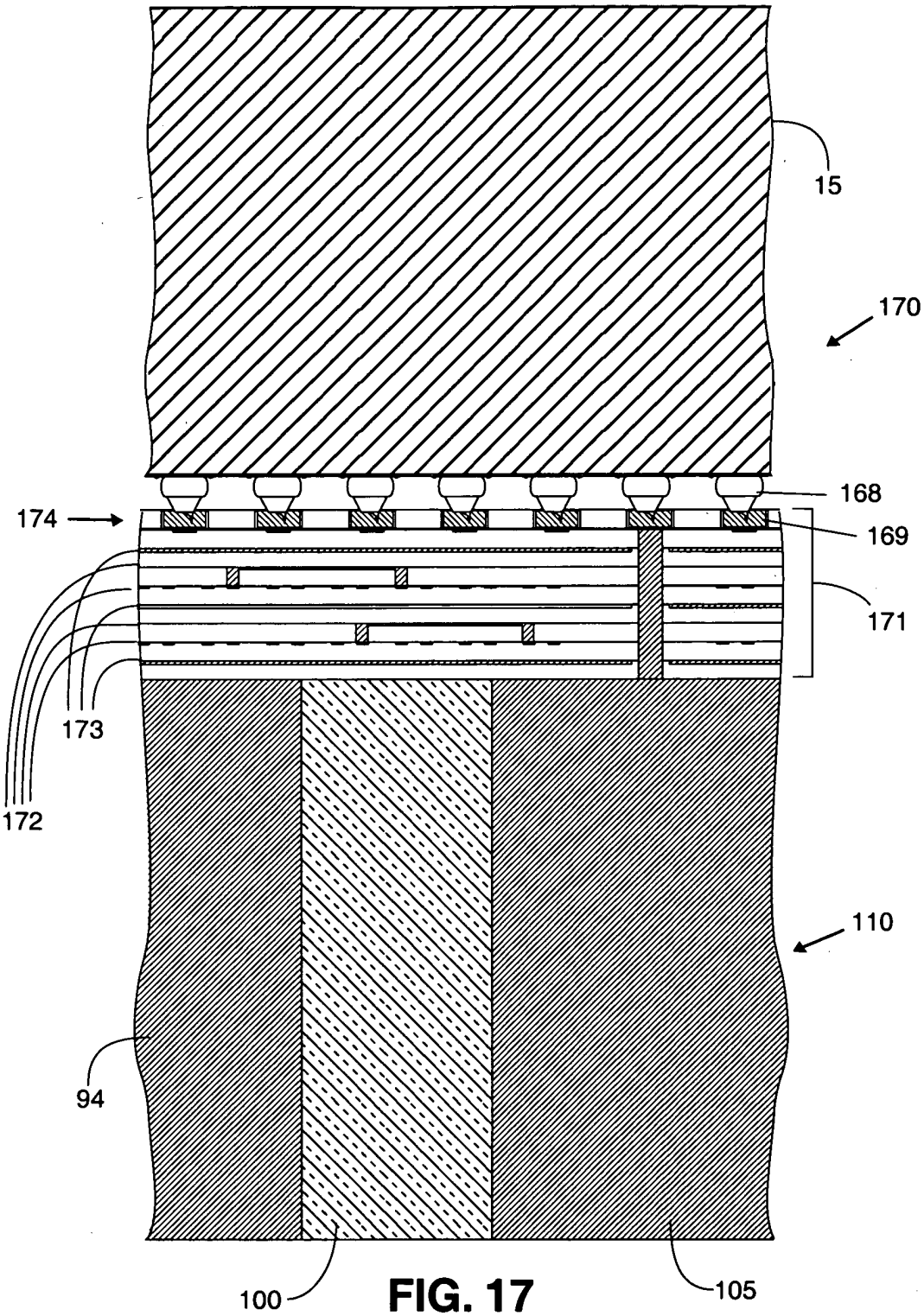

FIG. 17

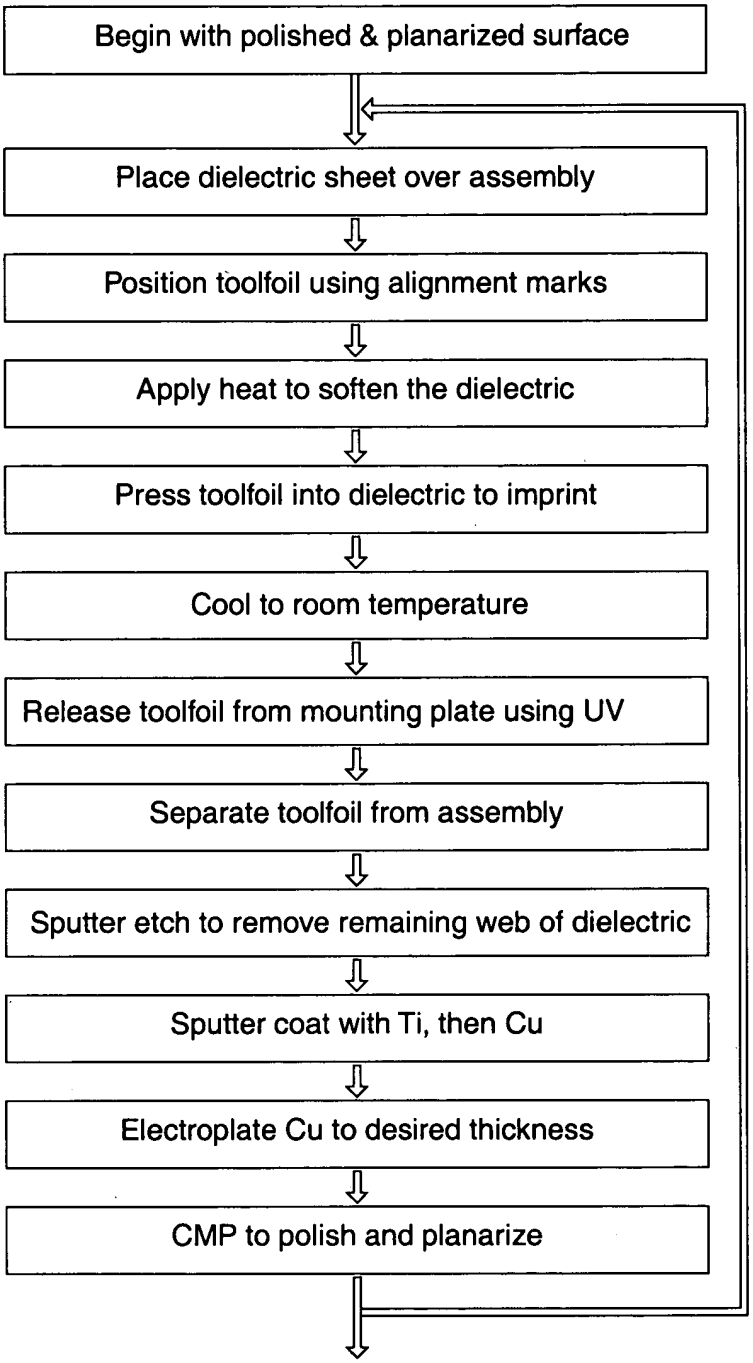
Begin with polished & planarized surface
Place dielectric sheet over assembly
Position toolfoil using alignment marks
Apply heat to soften the dielectric
Press toolfoil into dielectric to imprint
Cool to room temperature
Release toolfoil from mounting plate using UV
Separate toolfoil from assembly
Sputter etch to remove remaining web of dielectric
Sputter coat with Ti, then Cu
Electroplate Cu to desired thickness
CMP to polish and planarize

FIG. 18

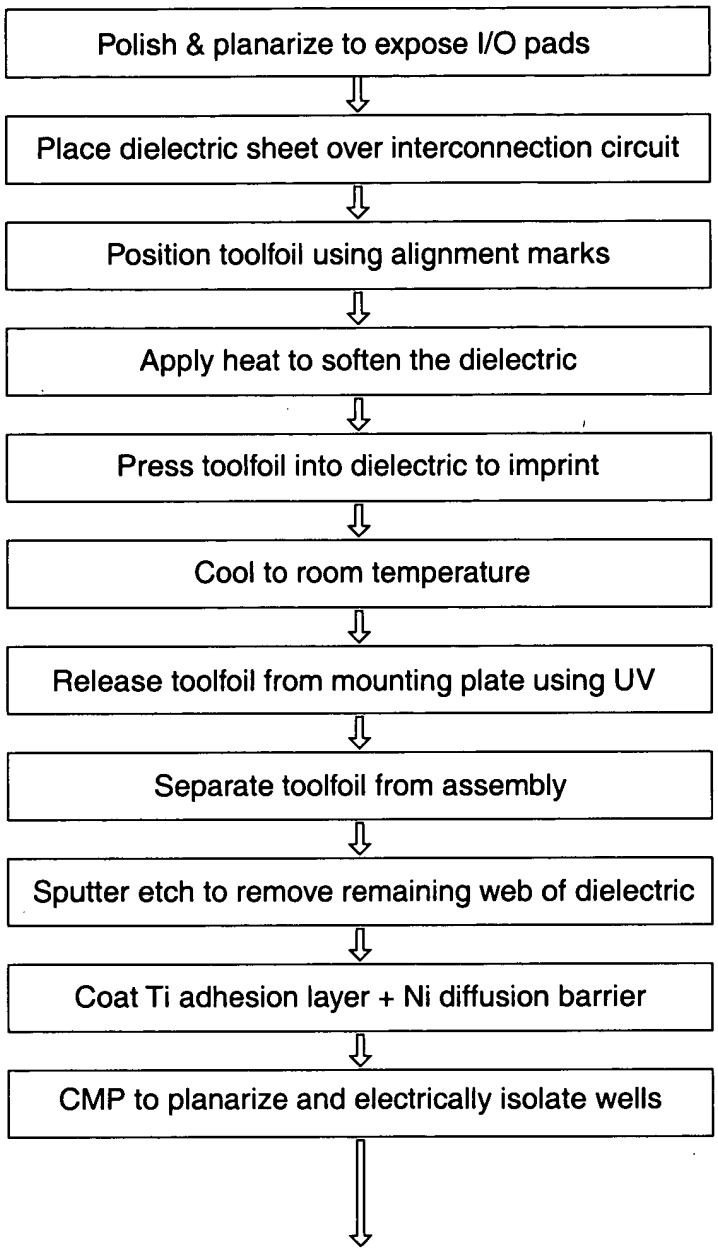
Polish & planarize to expose I/O pads
Place dielectric sheet over interconnection circuit
Position toolfoil using alignment marks
Apply heat to soften the dielectric
Press toolfoil into dielectric to imprint
Cool to room temperature
Release toolfoil from mounting plate using UV
Separate toolfoil from assembly
Sputter etch to remove remaining web of dielectric
Coat Ti adhesion layer + Ni diffusion barrier
CMP to planarize and electrically isolate wells

FIG. 19

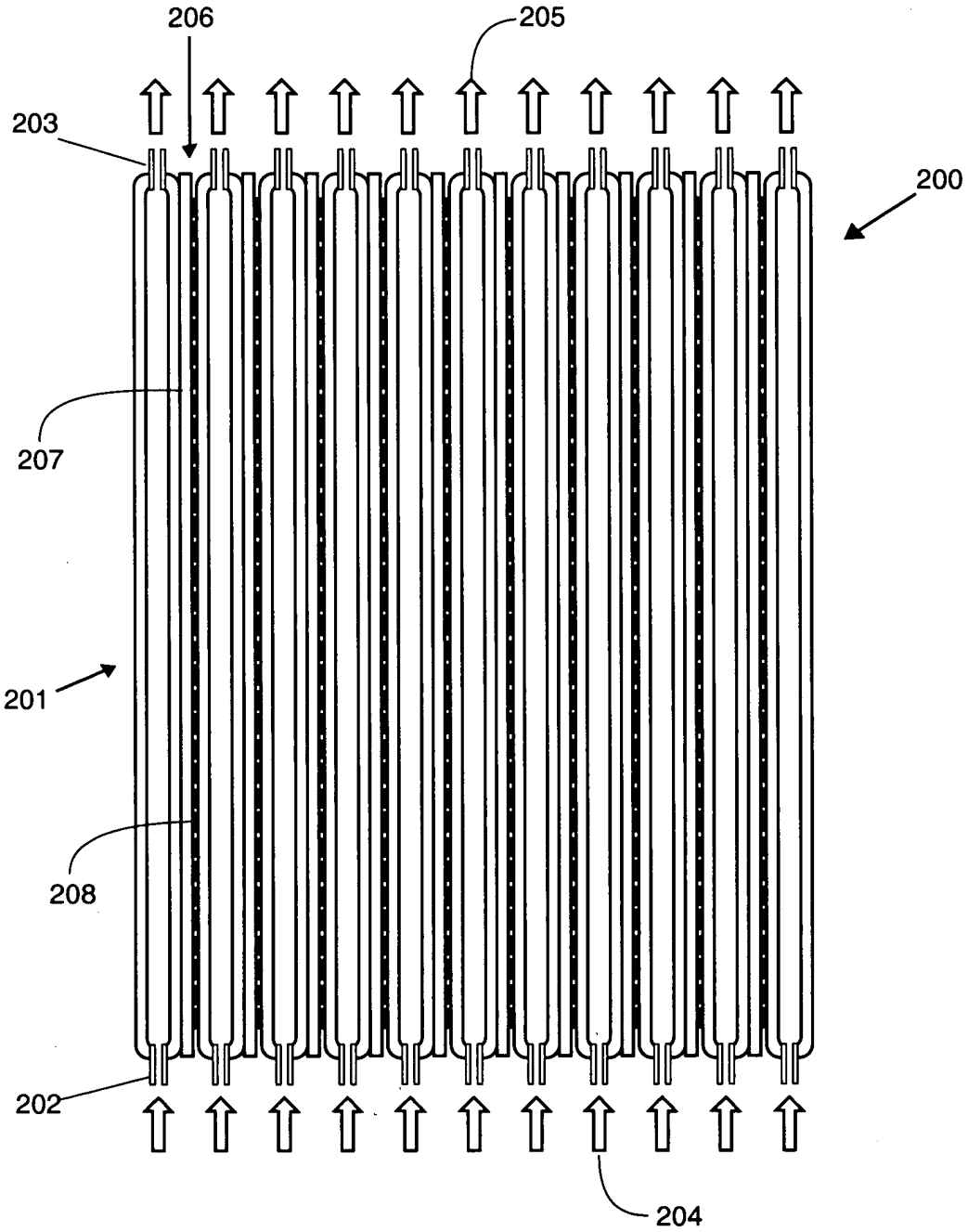

FIG. 20

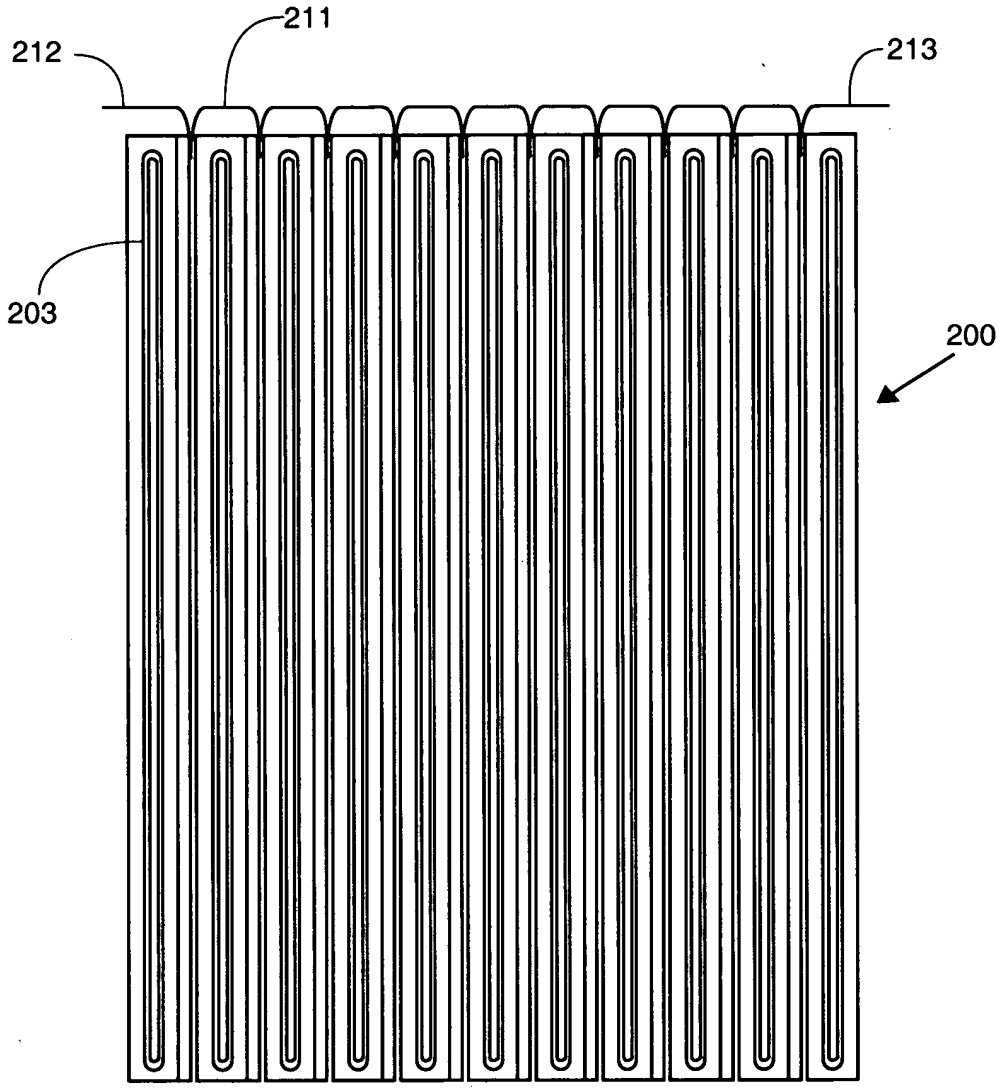

FIG. 21

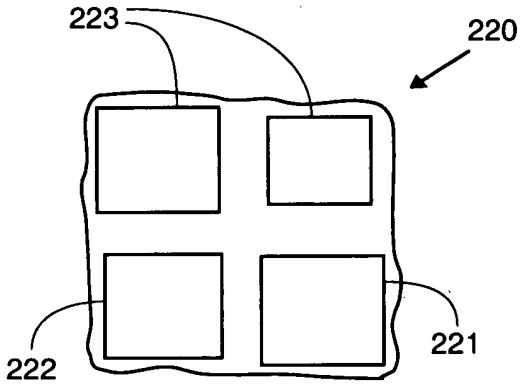

FIG. 22

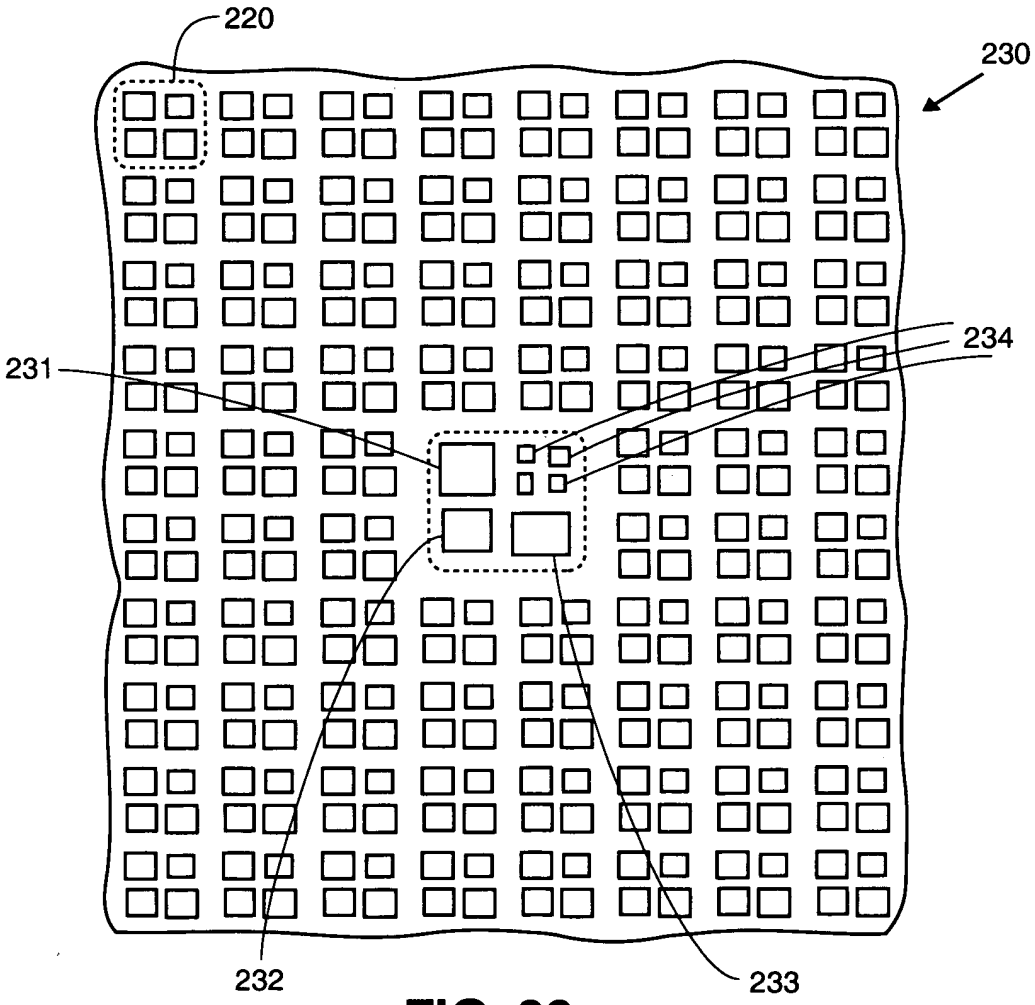

FIG. 23

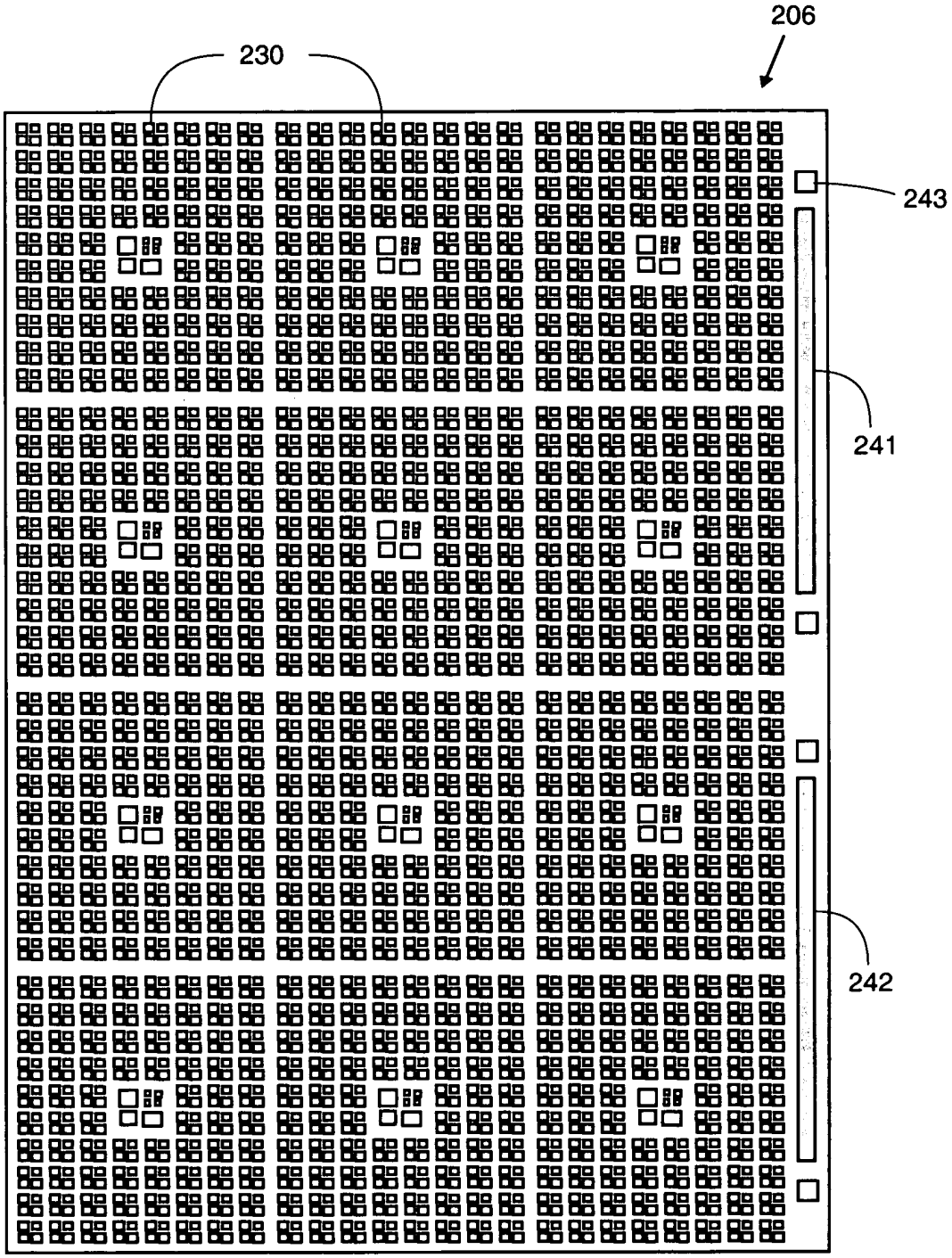

FIG. 24

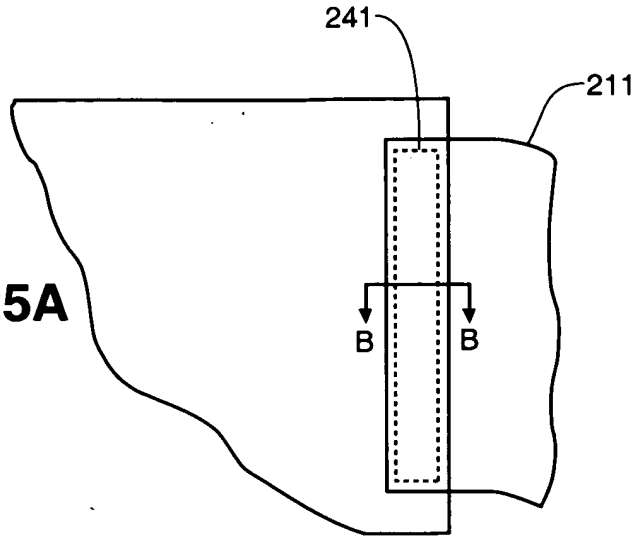

FIG. 25A

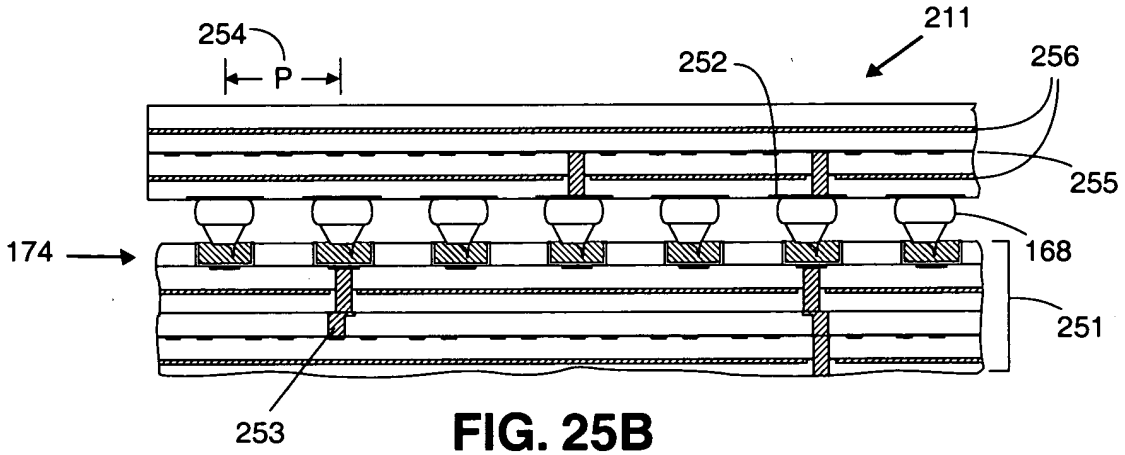

FIG. 25B

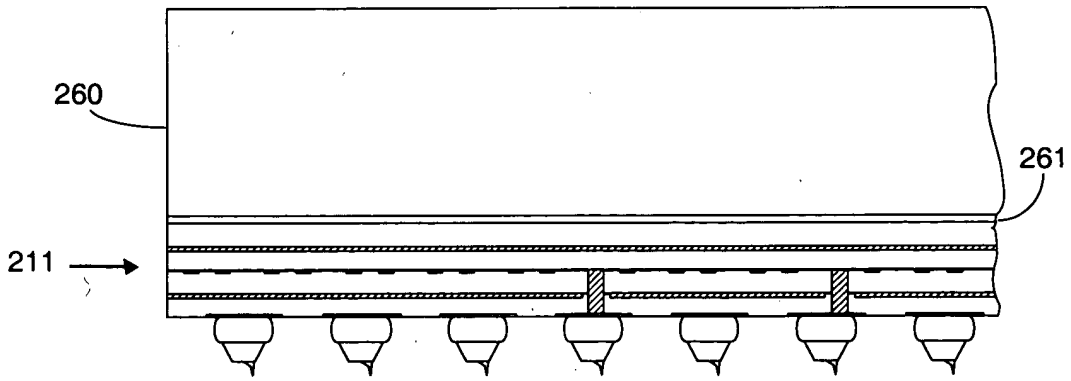

FIG. 26